

Notice of Allowability

Application No.

10/707,743

Examiner

Ernst V. Arnold

Applicant(s)

DE LA FUENTE JIMENEZ ET AL.

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to ____.
2. ☒ The allowed claim(s) is/are 1-21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☒ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☒ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date ____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>06/10/2004</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other ____. |

DETAILED ACTION
EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Dan Nesbitt on 10/25/2005.

The application has been amended as follows:

Insert at the end of [0030] in the specification: --Figure 3 components 4-6, 14, 15 and 18-21 are additional parts of the process equipment system.--

Claim 1 (Currently amended). A process for making a fertilizer complement, wherein an organic vegetal growth stimulator is obtained from *Ulva* and *Macrocystis* algae, comprising the steps of:

- a) acidifying the *Macrocystis* with an acidifying agent,
- b) providing *Ulva* algae, and
- c) digesting the acidified *Macrocystis* and the *Ulva* with an alkalinizing agent to obtain said fertilizer complement.

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Claim 2 (Currently amended). The process according to claim 1, wherein the growth stimulator comprises auxin phytohormones and cytokinin phytohormones.

Claim 3 (Currently amended). The process according to claim 1, wherein the *Ulva* algae comprises *Ulva rigida* and the *Macrocystis* algae comprises *Macrocystis pyrifera*.

Claim 7 (Currently amended). The process according to claim 6, wherein the weight ratio of *Macrocystis* to *Ulva* in step 3 is 1:1.

Claim 8 (Currently amended). The process according to claim 6, wherein the weight ratio of *Macrocystis* to *Ulva* in step 10 is up to 10:1 when the *Ulva* is in a dried state.

Claim 10 (Currently amended). The process according to claim 6, wherein the step of grinding the *Ulva* reduces the size of the *Ulva* to about 0.2 m.

Claim 12 (Currently amended). The process according to claim 4, wherein the ratio of ingredients is: water (200 L): *Macrocystis* (100 kg): 0.2 N HCl (2.5 L).

Claim 13 (Currently amended). The process according to claim 12, wherein the acidifying step is carried out with 0.2 N hydrochloric acid for 30-40 minutes at 50 °C with constant stirring.

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Claim 14 (Currently amended). The process according to claim 6, characterized in that the ratio of ingredients is: water (400L): algae mixture (200 kg): K_2CO_3 (2 kg).

Claim 15 (Currently amended). The process according to claim 14, characterized in that step 10 is carried out with K_2CO_3 for 2 hours at 65 ± 5 °C with constant stirring.

Claim 17 (Currently amended). The process according to claim 6, wherein the final pH value of the product is regulated with technical grade phosphoric acid (H_3PO_4).

Claim 18 (Currently amended). The process according to claim 14, wherein the final pH value of the product is about 4.5 to 6.2 in order to achieve an improved stabilization.

Claim 19 (Currently amended). The process according to claim 6, characterized in that the final product is filtered through a plate and frame press-filter using filtration media cellulose covers.

Claim 21 (Currently amended). The fertilizer complement according to claim 20, further comprising mineral elements, amino acids, vitamins and auxin phytohormones and cytokinin phytohormones based on the marine algae *Ulva* and *Macrocystis*.

The following is an examiner's statement of reasons for allowance: The claimed invention is directed to (a) a process for making a fertilizer complement, wherein an organic vegetal growth stimulator is obtained from *Ulva* and *Macrocystis* algae, comprising the steps of acidifying the *Macrocystis* with an acidifying agent, and digesting the acidified *Macrocystis* and the *Ulva* with an alkalinizing agent; and (b) a fertilizer complement composition obtained by said process. Although *Macrocystis* algae is known to be used individually as a fertilizer type ingredient and *Ulva* algae has been used as a food product, their combined use as claimed in the instant invention is neither disclosed nor suggested by the prior art. The prior art does not alone or in combination suggest a process for making a fertilizer complement obtained from *Ulva* and *Macrocystis* algae comprising the steps of acidifying the *Macrocystis* with an acidifying agent and digesting the acidified *Macrocystis* and the *Ulva* with an alkalinizing agent or a composition made thereby.

Brown algae are in the class Phaeophyceae and are commercially valuable as a source of alginic acid. The prior art teaches the steps of acidifying seaweeds of the Class Phaeophyceae, of which *Macrocystis* is a species, followed by treatment with an alkaline reagent to ultimately produce alginic acid (Strong (US 3,948,881); Haug (US 3,396,158); and Green (US 2,036,934).

Alginic acid is composed of two uronic acids: mannuronic acid and guluronic acid. The cell wall of the marine green algae *Ulva rigida* is composed of water-soluble sulfated glucuronorhamnoxyloglycan, alkali-soluble linear β -1,4-glucoxytan, and β -1,4-glucuronan and therefore does not have commercial value as a source of alginic acid

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(Lahaye et al) Carbohydrate Research 1996, 283, 161-173). Accordingly, there is no motivation to add *Ulva rigida* to produce a composition comprised of the green algae *Ulva rigida* and the brown algae *Macrocystis* and perform the process as described by Strong, Haug and Green.

For these reasons, the claimed invention, as a whole, as presently amended, is deemed to be allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernst V. Arnold whose telephone number is 571-272-8509. The examiner can normally be reached on M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz can be reached on 571-272-0887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EVA


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